

REMARKS

This amendment is submitted to continue the prosecution of the present application to its successful conclusion.

While it is believed all of the independent claims are patentably distinct over the prior art references relied upon by the Examiner, these claims are amended simply to clarify distinctions already present therein but which might not have been fully appreciated.

Status of the Claims

Claims 1-33, all the claims present in the above-identified application, stand rejected.

Status of Amendments

All amendments submitted prior to the Final Rejection dated September 13, 2007 have been entered. This is the only amendment submitted in response to the Final Rejection.

Summary of Claimed Subject Matter

An explanation of the subject matter defined in each of the independent claims follows. Independent claims 1, 5 and 6 are directed to similar subject matter, with claim 1 defining apparatus, claim 5 defining the method performed by that apparatus and claim 6 defining a recording medium on which is recorded a program that performs the method of claim 5. Hence, in the interest of being concise, these three independent claims are discussed together.

Similarly, claims 7, 11 and 12 are directed to similar subject matter, with claim 7 defining apparatus, claim 11 defining the method performed by that apparatus and claim 12 defining the recording medium on which is recorded a program that performs the method of claim 11. These three independent claims are discussed together.

Claims 14, 18 and 19 are directed to similar subject matter, with claim 14 defining apparatus, claim 18 defining the method performed by that apparatus and claim 14 and claim 19

defining the recording medium on which is recorded a program that performs the method of claim 18.

Claims 20, 24 and 25 are directed to similar subject matter, with claim 20 defining apparatus, claim 24 defining the method performed by that apparatus and claim 25 defining the recording medium on which is recorded a program that performs the method of claim 24.

Claims 27, 28 and 31 are directed to similar subject matter, with claims 27 and 28 defining apparatus and claim 31 defining the method performed by that apparatus.

(a) The subject matter of claims 1, 5 and 6

These claims are directed to image processing shown in, for example, Fig. 4 of this application. A playback section 1 plays back image data recorded on, for example, the recording medium of playback mechanism deck 11 (see Fig. 4 and paragraph [0020], for example, of Applicant's corresponding published application). The played back image data is transmitted to a reception apparatus via an interface 13 and transmission line 3, such as an IEEE 1394 transmission line, to reception apparatus 2 (paragraphs [0020] and [0102]). A one-frame temporary store 27 at the reception apparatus (Fig. 4) stores one frame of the image data transmitted from playback section 1 (paragraphs [0102] and [0103]).

When an instruction to temporarily stop the playback of the image data is received, such as a "pause" instruction received at a control section 15 (paragraph [0015]), control section 15 controls the playback section 1 and the transmission section 3, 13 to stop the playback and the transmission of the image data, respectively (paragraphs [0015] -[0017]). As a result, the playback mechanism 11 stops feeding the record medium on which the image data is recorded, such as video tape, and the transmission of image data through transmission link 3 also is stopped (paragraphs [0016] and [0017]). In addition, the transmission section 3, 13 transmits a message (e.g. a "pause" message) to the reception apparatus 2 representing that the playback of

the image data has been stopped (paragraphs [0118]-[0119] and [0155] (see Figs. 4 and 9, for example)).

The reception apparatus 2 responds to the pause message to repetitively read out the single frame of image data stored in one-frame temporary store 27 while the playback section 1 and the transmission section 3, 13 are stopped (paragraphs [0108]-[0109], [0116]-[0118], [0125], [0127] and [0135]).

The control section 15 establishes on the transmission line 3 a first channel for transmitting the image data (paragraphs [0024], [0037], [0102] and [0113]) and a second channel for transmitting the pause message (paragraphs [0119], [0155] and [0160]).

(b) The Subject Matter of Claims 7, 11 and 12

These claims are similar to the claims of section (a), described above, but are directed to the receiving apparatus that include a reception section 2 for receiving the image data played back and transmitted from transmission apparatus 1 via a transmission line 3. The played back image data is temporarily stored in a one-frame storage section 27 having a storage capacity of one frame of the image data (paragraphs [0125], [0127], [0147] and [0161], for example). When a message, such as a “pause” message, representing that playback of the image data is temporarily stopped, is received by a control section 25, a display apparatus 22, 24 is controlled to repetitively read out and display the single frame of image data temporarily stored in one-frame storage section 27 (paragraphs [0018], [0019], [0125] and [0127]). The image data is received at the receiving apparatus on a first channel and the message is received on a second channel (paragraphs [0024], [0037], [0102] and [0113]; and [0119], [0155] and [0160]).

(c) The Subject Matter of Claim 13

This claim is directed to an image processing apparatus in which a transmission apparatus 1 plays back image data and transmits that image data through a transmission line 3 to a

reception apparatus 2 (Fig. 4, paragraphs [0020] and [0102], for example). The transmission apparatus includes a playback section 11, a transmission section 13 and a control section 15 that controls the playback and transmission sections to stop playing back the image data and to stop transmitting image data, respectively, when a pause instruction is received (paragraphs [0015]-[0017]). The control section 15 transmits a pause message to the reception apparatus (paragraphs [0018]-[0019] and [0155] (see Figs. 4 and 9, for example)). The image data is transmitted on a first channel on the transmission line and the pause message is transmitted on a second channel (paragraphs [0024], [0037], [0102], [0113]), [0119], [0155] and [0160]).

The reception apparatus includes a reception section 2 for receiving the image data played back and transmitted from transmission apparatus 1 via transmission line 3. The played back image data is temporarily stored in a one-frame storage section 27 having a storage capacity of a single frame of the image data (paragraphs [0125], [0127], [0147] and [0161], for example). A control section 25 controls a display section 22, 24 to display the image data temporarily stored in the storage section and to repetitively read out the one frame of temporarily stored image data when the pause message is received (paragraphs [0018], [0019], [0125] and [0127]).

(d) The Subject Matter of Claims 14, 18 and 19

The subject matter of these claims is similar to the subject matter of the claims of section (a). Here, when a message is received at the transmission apparatus, for example, from the reception apparatus, representing a pause instruction, a control section, such as control section 15, controls the transmission section 12, 13 at the transmission apparatus 1 to stop transmitting the image data and also controls the reception apparatus 2, 22 to repetitively read out the one frame of temporarily stored image data (paragraphs [0118]-[0119], [0125], [0127] and [0155]).

(e) The Subject Matter of Claims 20, 24 and 25

The subject matter of these claims is similar to the subject matter of the claims of section (b). Here, when a pause instruction is received at transmission section 13, 12 of transmission apparatus 1, the transmission section sends a message to the reception apparatus representing receipt of the pause instruction (paragraphs [0018], [0019], [0125] and [0127]). When the pause instruction is received, a display control section 52 at the display apparatus 32 of, for example, Fig. 9, controls the display apparatus to repetitively read out the one frame of image data temporarily stored in the storage section 55 of apparatus 32 (paragraphs [0146]-[0147]).

(f) The Subject Matter of Claim 26

The subject matter of this claim is similar to the subject matter of the claims of section (d), but here the transmission line is described as a network; and the control section 15, 44 at the transmission apparatus stops the transmission of image data to the reception apparatus when a message is issued through the network representing a pause instruction (paragraphs [0018], [0019], [0125], [0127] and [[0159]-[0162]]). As discussed above in connection with other claims, the reception apparatus includes a one-frame storage section 55 for temporarily storing one frame of the image data received from the transmission apparatus. The reception apparatus also includes a transmission section 52, 51 for transmitting to the transmission apparatus the aforementioned message, and a display control section 54 for controlling the display apparatus 53 to repetitively read out the single frame of temporarily stored image data (paragraphs [0161]-[0162]).

(g) The Subject Matter of Claims 27, 28 and 31

The subject matter of this claim is similar to the subject matter of the claims of section (b), but here audio/video contents are played back, received and temporarily stored in a one-frame storage section 27 at the reception apparatus. Playback apparatus 22 (Fig. 4) is controlled to repetitively play back and display on display unit 24 the single frame of audio/video contents

stored in the storage section 27 when a message is received at the reception apparatus representing a pause mode (paragraphs [0018], [0019], [0125] and [0127]).

Issues Raised in the Final Rejection of September 13, 2007

The issues presented by the Final Rejection are:

- A. Is the Subject Matter defined by Claims 1, 2, 4, 5, 14-16, 18 and 27 Obvious Within the Meaning of 35 USC 103 in View of the Cumulative Teachings of Lownes, Nishimura and what is Described in the Present Application as Related Art?
- B. Is the Subject Matter defined by Claims 3 and 17 Obvious Within the Meaning of 35 USC 103 in View of the Cumulative Teachings of Lownes, Nishimura, Applicant's Related Art and Sugiyama?
- C. Is the Subject Matter defined by 7-10, 11, 13, 20-24 and 26 Obvious Within the Meaning of 35 USC 103 in View of the Cumulative Teachings of Lownes, Nishimura, Applicant's Related Art and Gerszberg?
- D. Is the Subject Matter defined by Claims 6 and 19 Obvious Within the Meaning of 35 USC 103 in View of the Cumulative Teachings of Lownes, Nishimura, Applicant's Related Art and Official Notice?
- E. Is the Subject Matter defined by Claims 12 and 25 Obvious Within the Meaning of 35 USC 103 in View of the Cumulative Teachings of Lownes, Nishimura, Applicant's Related Art, Gerszberg and Official Notice?
- F. Is the Subject Matter defined by Claims 28-33 Obvious Within the Meaning of 35 USC 103 in View of the Cumulative Teachings of Lownes, Nishimura, Applicant's Related Art, Gerszberg and Ryu?

Argument

Overall Objective of Applicant's Invention

The overall objective of Applicant's claimed invention is to improve usage of the bandwidth of a transmission link, or network, such as a transmission link that conforms to the IEEE 1394 standard, between transmission apparatus that plays back image data (or audio/video (A/V) data) and reception apparatus that can display the image data when the transmission apparatus is in a "pause" mode. Heretofore, when such transmission apparatus is in its pause mode, the very same image frame is repeatedly played back at the transmission apparatus by, for

example, a video tape player, a video disc player or the like, and transmitted to the reception apparatus over the transmission link. This repetitive transmission occupies a significant portion of the available transmission bandwidth, thereby limiting the transmission of other data over the same transmission link and thus preventing efficient usage of the advantages expected from a 1394 communication link (see paragraphs [0055]-[0057], for example, of Applicant's published application). Applicant has invented a novel and unobvious solution to this problem.

Applicant's Claimed Solution

Applicant recognizes that during the pause mode at the transmission apparatus, the repetitive transmission of the same image frame constitutes redundant information. Redundant transmissions can be eliminated if the image data transmitted to the reception apparatus is temporarily stored at the reception apparatus and then repetitively read out of the temporary store when the transmission apparatus enters the pause mode. As a result, the transmission apparatus no longer needs to transmit that same frame repeatedly to the reception apparatus because that frame now is repeatedly read from the temporary store at the receiver side of the transmission link. Consequently, the bandwidth of the transmission link can be used to transmit other data, thereby increasing its efficiency, because that bandwidth no longer needs to be occupied by unnecessary redundant image data.

This feature of providing a temporary store at the reception apparatus and repetitively reading out the temporarily stored image data that had been transmitted from the transmission apparatus is recited in all of Applicant's independent claims and, therefore, it is recited in each and every one of Applicant's claims. While this was pointed out in Applicant's amendment filed July 3, 2007, it might not have been fully appreciated and, therefore, the recitations of this feature in Applicant's independent claims are repeated here:

Claim 1:

said reception apparatus having a one-frame temporary store to temporarily store one frame of the played back image data transmitted thereto;

the image data of one frame stored in said one-frame temporary store is repetitively read out while said playback and transmission sections are stopped.

Claims 5 and 6:

a temporary storage step of temporarily storing in a one-frame memory one frame of the played back image data transmitted to the reception apparatus;

a repetitive read out step of repetitively reading out the one frame of image data temporarily stored at the reception apparatus while the playback and transmission of the image data are temporarily stopped.

Claim 7:

a one-frame storage section having a storage capacity of one frame for temporarily storing one frame of the played back image data received by said reception section;

a control section for controlling a display apparatus ... to repetitively read out and display the image data of one frame temporarily stored in said one-frame storage section.

Claims 11 and 12:

a storage step of temporarily storing in a one-frame memory one frame of the played back image data received by the reception step;

controlling ... when a message representing that playback of the image data is temporarily stopped is received through said transmission line, said display step to repetitively read out and display the temporarily stored image data of one frame.

Claim 13:

said reception apparatus including ... a one-frame storage section having storage capacity of one frame for temporarily storing one frame of the played back image data received by said reception section,

and a control section for ... controlling, when a message representing that playback of the image data is temporarily stopped is received through said transmission line, said display apparatus to repetitively read out and display the one frame of image data temporarily stored in said storage section.

Claim 14:

said reception apparatus having a one-frame temporary store to temporarily store one frame of the played back image data transmitted thereto;

a control section ... for controlling said reception apparatus to repetitively read out from said one-frame temporary store the temporarily stored image data of one frame while said playback of said image data is stopped.

Claims 18 and 19:

a storage step of temporarily storing in a one-frame memory one frame of the played back image data that is transmitted to said reception apparatus;

a control step ... for causing the one frame of temporarily stored image data to be repetitively read out while the playback of said image data is stopped.

Claim 20:

a one-frame storage section having a storage capacity for temporarily storing one frame of the played back image data received by said reception section;

a display control section for controlling, when the instruction to temporarily stop the playback of the image data is received, said display apparatus to repetitively read out and display the image data of one frame temporarily stored in said one frame storage section.

Claims 24 and 25:

a storage step of temporarily storing one frame of the played back image data received by the reception step into a one-frame storage section having a storage capacity of one frame of image data;

a display control step of causing, when the instruction to temporarily stop the playback of the image data is received, the repetitive read out and display of the image data of one frame temporarily stored in said one-frame storage section.

Claim 26:

said reception apparatus including ... a one-frame storage section having a storage capacity of one frame of image data for temporarily storing one frame of the played back image data received by said reception section,

a display control section for controlling, when the instruction to temporarily stop the playback of the image data is received, said display apparatus to repetitively read out and display the image data of one frame temporarily stored in said one-frame storage section.

Claims 27 and 28:

a one-frame storage section having a storage capacity of one frame of image data for temporarily storing one frame of the played back audio/video contents received by said reception section;

a playback apparatus to play back the audio/video contents temporarily stored in said storage section; and

a control section operable ... to control, when a message representing that playback of the audio/video contents is temporarily stopped is received through said transmission line, said playback apparatus to repetitively play back and display the audio/video contents of one frame stored in said one-frame storage section.

Claim 31:

a storage step of temporarily storing one frame of the played back audio/video contents received by said reception step into a one-frame storage section having a storage capacity of one frame of video content;

a playback step of playing back the temporarily stored audio/video contents; and

a control step of controlling ... said playback step to repetitively play back and display the one frame of audio/video contents temporarily stored in said one-frame storage section based on the message representing a pause mode.

Description of the Cited Prior Art

At the outset, it is respectfully submitted none of the references cited in the Final Rejection, including that which Applicant identifies as "related art," is suggestive of the aforequoted feature of temporarily storing at the reception apparatus the image data sent from the transmission apparatus and then repetitively reading the image data from that temporary store. The Final Rejection recognizes this deficiency in Lownes, Nishimura, Sugiyama, Gerszberg and Ryu; and relies upon Applicant's related art for an alleged teaching of this feature. That this feature is not suggested by Applicant's related art is discussed first.

Applicant's Related Art

Applicant's drawing Figs. 1-3 and paragraphs [0003]-[0057] are identified as related art. Figs. 2 and 3 illustrate a transmission apparatus 1 or 31 having an image playback deck 11 or disk 41 that plays back image data. The transmission apparatus transmits the image data over an

IEEE 1394 transmission line 3 to reception apparatus 2 or 32 having a display 24 (Fig. 2) or 53 (Fig. 3) and also having a recorder 21 (Fig. 2). There is no illustration in Figs. 1-3 of any temporary store. There is no description in paragraphs [0003]-[0057] of a temporary store. Compare Figs. 1-3 with Fig. 4, for example, of the present application, which clearly illustrates a temporary store 27.

There is no description in Applicant's paragraphs [0003]-[0057] of a temporary store that temporarily stores the played back image data transmitted thereto and from which the temporarily stored image data is repetitively read out while the playback deck 11 or disk 41 and the transmission section 13 or 43 are stopped. On the contrary, when the playback deck 11 or disk 41 is stopped, as in the pause mode, the very same image frame is repeatedly read by deck 11 or disk 41 and repeatedly transmitted over line 3 to the reception apparatus. See paragraph [0029], which states:

After the pause mode is entered, the mechanism deck 11 stops feeding of the video tape and supplies image data of the same frame obtained by repetitively scanning the same portion of the video tape to the signal processing circuit 12. The signal processing circuit 12 processes the video data from the mechanism deck 11 to produce normal image data of the NTSC system and supplies the image data to the interface circuit 13 and also to the display 14 so that the image data are displayed on the display 14. The interface circuit 13 transmits the image data from the signal processing circuit 12 to the camcorder 2 through the IEEE 1394 cable 3. (emphasis added.)

See also paragraph [0054], which states:

After the pause mode is entered, the signal processing circuit 42 supplies image data of the same frame obtained by repetitively playing back a frame of the image data, which has been played back last from the hard disk 41, from the hard disk 41 to the interface circuit 43. The interface circuit 43 transmits the image data from the signal processing circuit 42 to the digital television monitor 32 and also to the display 14 so that the image data are displayed through the IEEE 1394 cable 3. (emphasis added.)

Finally, reference is made to paragraph [0056], which states:

... in the AV systems described above, even if a pause instruction is issued, image data of the same frame are transmitted repetitively through the IEEE 1394 cable 3.

In other words, also when a pause mode is established, image data are transmitted occupying a transmission bandwidth similar to that in normal playback. More particularly, where the image data to be transmitted are data, for example, of the NTSC system, they are transmitted occupying a transmission bandwidth corresponding to 29.97 frames/sec.

Applicant's related art fails to describe the repetitively reading out of temporarily stored image data at the reception apparatus when a pause mode is entered at the transmission apparatus so as to avoid unnecessarily occupying bandwidth of the transmission line by redundant data. The Final Rejection relies upon paragraphs [0029] and [0056] of Applicant's published application as a teaching of this feature. These paragraphs are quoted above. There is no such teaching or suggestion found therein.

While Applicant does not here seek to group together all of the rejected claims (Applicant separately argues below the rejections of the claims), it is urged that the Final Rejection can and should be withdrawn on this ground alone. As implicitly found by the Examiner, none of the references to Lownes, Nishimura, Sugiyama, Gerszberg and Ryu suggests repetitively reading out at the reception apparatus temporarily stored image data sent from transmission apparatus when a pause mode is entered at the transmission apparatus. Rather, the Examiner relies upon Applicant's related art for this teaching -- but as is clear from Applicant's specification, there is no such teaching found in Applicant's related art. In the absence of a teaching in the prior art of important elements recited in Applicant's claims, those claims are patentable and the rejection thereof should be withdrawn.

In addition, it is respectfully submitted that the discussion of "related art" in Applicant's specification is not an admission of "prior art" within the meaning of 35 USC 102(a) and (b). Prior art consists of printed publications or patents describing an applicant's claimed invention and published before the applicant made his invention, or published more than one year before the applicant filed his patent application, or was known to others in the United States before the

applicant made his invention, or was on sale in the United States more than one year before the applicant filed his patent application. Applicant's present specification describes "related art" that does not necessarily fit the statutory definition of "prior art." Applicant's specification does not identify a printed publication or patent that describes such "related art." Applicant's specification does not admit that such "related art" was known in the U.S. before Applicant made his invention, nor does applicant's specification admit that such "related art" was on sale in the U.S. more than one year before the effective filing date of this application. It is conceivable that the "related art" described in the instant specification was known to others in Japan (not necessarily the United States), such as Applicant's co-workers. That which is known to others outside the United States does not qualify as statutory "prior art." Therefore, for this additional reason, the Final Rejection should be withdrawn.

Lownes EP 0 993 185

Lownes describes, in Fig. 1B, a video playback device VCR 113 that transmits image data over an IEEE 1394 connection bus 96 to a set-top-box (STB) 90. The STB 90 has an input multiplexer to receive either the image data transmitted from the VCR 113 or image data from a digital television tuner (see paragraph [0020] of Lownes). The purpose of Lownes is to display to a viewer status information regarding the received signal and the STB 90 (Lownes paragraph [0030]). The STB may control the operation of the VCR through bus 96 (Lownes paragraph [0041]). While Lownes refers to a buffer memory in VCR 113 and in the IEEE interface 112, there is no suggestion whatsoever of a temporary store in STB 90 for storing image data sent from VCR 113 and then repetitively reading out the temporarily stored image data when VCR 113 is in the pause mode. Rather, Lownes suffers from the very problem that is addressed and overcome by Applicant's claimed invention -- Lownes transmits repeated, redundant image data over bus 96 when VCR 113 is in the pause mode.

Nishimura U.S. Pat. 5,412,418

Nishimura describes a video phone that transmits A/V signals through a first channel and a control message through a second channel of an Integrated Services Digital Network (ISDN). The two channels are always present, and there is no need to “establish” one or the other channel. Nishimura was cited for its description of the two ISDN channels. The Examiner correctly did not suggest that Nishimura describes a temporary store for storing image data sent from a playback device and then repetitively reading out the temporarily stored image data when the playback device is in its pause mode.

Sugiyama U.S. Pat. 5,815,631

Sugiyama (having a common assignee with the instant application) describes an AV system in which a display device in the system can display video signals played back from any one of several playback devices in that system. This reference was relied upon for describing the transmission of image data to additional reception apparatuses.

Gerszberg U.S. Pat. 6,020,916

Gerszberg describes a video phone that transmits a frozen video screen to a particular party that is muted, whereby that party sees the frozen screen that may be transmitted from the video phone by “a short repeating loop of the last few moments of video” (col. 8, lines 54-59 of Gerszberg). Thus, it is the transmitting video phone that transmits the frozen screen to the receiving video phone. There is no suggestion of a temporary store at the receiving video phone for storing image data sent from the transmitting video phone and then repetitively reading out the temporarily stored image data when the receiving video phone is muted. Indeed, Gerszberg does not describe a “pause” mode at the transmitting video phone. Gerszberg suffers from the very problem that is addressed and solved by Applicant’s claimed invention.

Ryu U.S. Pat. 5,442,452

Ryu describes picture-in-picture (PIP) processing that permits swapping of pictures and sounds associated with the swapped pictures. The relevance of Ryu to Applicant's claimed invention is not fully understood; but it is clear that Ryu does not suggest storing image data sent from a playback device and then repetitively reading out the temporarily stored image data when the playback device is in its pause mode.

Discussion of the Issues Raised by the Final Rejection

A. The Subject Matter defined by Claims 1, 2, 4, 5, 14-16, 18 and 27 is not Obvious Within the Meaning of 35 USC 103 in View of the Cumulative Teachings of Lownes, Nishimura and what is Described in the Present Application as Related Art.

Applicant agrees that Lownes describes a playback section, a transmission section for transmitting played back image data to reception apparatus through a transmission line and a control section for putting the playback section in a pause mode. Applicant also agrees that Nishimura describes an ISDN connection that has two fixed channels. Applicant disagrees that Lownes controls his transmission section to stop the **transmission** of image data when the playback section is stopped. In the pause mode, Lownes continues to transmit whatever frame is played back by the playback section. Applicant also disagrees that the cumulative teachings of Lownes and Nishimura suggest that the control section of Lownes (or of Nishimura) **establishes** an image data channel and a message channel on the transmission line. Lownes is silent with respect to such channels; and Nishimura relies upon ISDN that avoids the need to **establish** data and message channels -- these channels already exist.

Most importantly, however, is the failure of Lownes, Nishimura and Applicant's related art to describe or even suggest a temporary store at the reception apparatus to temporarily store the played back image data transmitted from the playback section at the transmission section; and to repetitively read out the temporarily stored image data while the playback and transmission sections both are stopped. The cumulative teachings of Lownes, Nishimura and

Applicant's related art -- even assuming what is described as Applicant's related art can be used to reject Applicant's claims -- suggest that when the playback section at the transmission section is in the pause mode, that playback section repeatedly plays back a frame of image data and transmits the repeated, redundant image data to the reception apparatus. These cumulative teachings exemplify the inefficient usage of the transmission bandwidth between the transmission and reception apparatuses. One of ordinary skill in the art, after reading and understanding Lownes, Nishimura and Applicant's related art, would design an image processing apparatus that does not conform to Applicant's claimed structure and does not perform Applicant's claimed method.

While KSR International Co. v. Teleflex Inc., 550 US _____, 82 USPQ2d1385 (2007) (*KSR*) has reduced the burden on the Office to establish that which is obvious, nevertheless, there remains the obligation to find in the prior art a teaching or suggestion of all of the elements of an Applicant's claim. If, as here, critical limitations of a claim find no correspondence in the prior art, it cannot be concluded that such limitations are obvious. The failure of the references relied upon in the Final Rejection to describe temporarily storing one frame of played back image data transmitted from a playback section to reception apparatus and repetitively reading out the temporarily stored frame of image data when the playback and transmission sections are stopped leads to the conclusion that at least these limitations of Applicant's claims 1, 2, 4, 5, 14-16, 18 and 27 are unobvious.

With respect to Applicant's claims 2 and 15, these claims call for control over the transmission section. While Lownes controls the playback section, there is no description in this reference of controlling the transmission section. Hence, contrary to the Examiner's interpretation of Lownes, this reference does not describe all of the features recited in Applicant's claims 2 and 15.

With respect to Applicant's claims 14 and 18, these claims call for controlling the reception apparatus to repetitively read out the temporarily stored frame of image data and controlling the transmission section to stop transmitting image data when a message representing that a pause instruction is issued through the network. As mentioned, Lownes does not control his transmission section. Neither Lownes nor Nishimura nor Applicant's related art respond to messages issued through the network.

B. The Subject Matter defined by Claims 3 and 17 is not Obvious
Within the Meaning of 35 USC 103 in View of the Cumulative Teachings of
Lownes, Nishimura, Applicant's Related Art and Sugiyama.

The discussion above with respect to claims 1 and 14 are equally applicable to claims 3 and 17. Applicant agrees that Sugiyama describes transmitting image data to additional reception apparatuses; but the feature of temporarily storing one frame of image data at the reception apparatus and repetitively reading out that temporarily stored frame of image data when the playback section at the transmission apparatus is in the pause mode is not suggested by Sugiyama.

C. The Subject Matter defined by 7-10, 11, 13, 20-24 and 26 is not Obvious
Within the Meaning of 35 USC 103 in View of the Cumulative Teachings of
Lownes, Nishimura, Applicant's Related Art and Gerszberg.

In rejecting claims 7 and 11, the Examiner relied upon Lownes for an alleged teaching of a storage section for temporarily storing the played back image data received by the reception section. The only storage section described by Lownes is the VCR 113 (Fig. 1B), which is at the transmission section, not the reception section. VCR 113 does not temporarily store one frame of played back image data received by the reception section. VCR 113 must repeatedly scan the same image and transmit the repeated image data to STB 90 over IEEE 1394 bus 96 when the VCR is in the pause mode. The Examiner's interpretation of Lownes is inconsistent with the clear teachings of Lownes.

The Examiner also relied upon Applicant's related art as an alleged teaching of displaying a frame of image data temporarily stored in the storage section (see the first full paragraph at page 8 of the Final Rejection). Applicant's Figs. 1-3, the related art, do not have a temporary storage section to supply the display apparatus with image data played back from the transmission apparatus.

Finally, the Examiner relied upon Gerszberg as teaching "a repeated loop of the last few moments of the video displayed," concluding that Gerszberg describes repeatedly reading stored image data at a receiver when the transmitter is in the pause mode. However, as discussed above in connection with Gerszberg, the "loop" of video apparently is at the transmitting device, which transmits the frozen screen to the receiving device. Gerszberg does not describe a temporary store at the receiving device. He does not describe repeatedly reading out from a temporary store at the receiver one frame of image data when the receiver is muted. Rather, Gerszberg repeatedly sends the same video image of the frozen screen from the transmitting device to the receiving device.

Since the cumulative teachings of Lownes, Nishimura, Gerszberg and Applicant's related art fail to describe all of the elements recited in Applicant's claims 7 and 11, the rejection of these claims should be withdrawn.

In rejecting claim 8, the Examiner relies upon Lownes for describing a control section that controls the display section. But, at best, Lownes controls VCR 113 from STB 90; and he displays whatever is played back by the VCR. Lownes fails to suggest that his display section should be changed over from displaying the temporarily stored image to display the image received over IEEE 1394 bus 96. Lownes simply displays whatever is received over the bus -- be it the repeated playback of the same image frame by the VCR or new video images.

Moreover, in rejecting claim 8, the Examiner asserts that Lownes describes a control section that “supervises the second channel for delivery of said message.” But Lownes has no second channel to supervise.

Since Lownes fails to teach that which the Examiner ascribes to this reference, the rejection of claim 8 should be withdrawn.

In rejecting claim 9, The Examiner refers to Lownes’ buffer as corresponding to the claimed storage section having a storage capacity for one screen. But, Lownes’ buffer is located at his VCR 113 or in interface 110 of his IEEE 1394 connection. This buffer thus does not temporarily store a frame of the played back image data “received by said reception section.”

In rejecting claim 13, the Examiner simply referred to his rejection of claims 1 and 7. Claim 13 differs from claim 7 by reciting the transmission apparatus, the playback section included in the transmission apparatus, a transmission section included in the transmission apparatus, and a control section included in the transmission apparatus that stops the playback section and stops the transmission section when a pause instruction is received. The control section of the transmission apparatus also transmits to the reception apparatus a message that playback has been paused. When this message is received, the reception apparatus causes the frame of image data temporarily stored at the reception apparatus to be repetitively read out. Neither Lownes, nor Nishimura, nor Applicant’s related art, which were relied upon to reject claims 1 and 7, describe the transmission section recited in Applicant’s claim 13. Nor do they describe the temporary store at the reception apparatus. Therefore if none of these references suggests Applicant’s claimed features, the combination of those references still fail to provide the necessary suggestion.

Claims 20 and 24 were rejected for the same reasons as were set out for the rejection of claims 1, 7 and 14. But, claims 20 (the apparatus claim) and 24 (the method claim) recite

limitations not recited in claims 1, 7 and 14. Claim 20, for example, calls for a transmission section that transmits a message to the transmission apparatus when a pause instruction is received. This message represents reception of the pause instruction. Claim 20 also calls for a display control section for controlling the display apparatus to repetitively read out the frame of temporarily stored image data when the pause instruction is received. These limitations are not found in Lownes, Nishimura, Gerszberg or Applicant's related art, taken alone or in combination.

Claims 21 and 22 were rejected for the same reasons as were relied upon to reject claims 2, 8 and 9. Claims 21 and 22 depend from claim 20 and, therefore, recite limitations not found in Lownes, Nishimura, Gerszberg or Applicant's related art, as mentioned above. In addition, Applicant's arguments in connection with claims 2, 8 and 9 are incorporated herein.

Claim 26 differs from claims 1, 7, 14 and 20, discussed above, in that claim 26 recites cumulative features found in all of these previously discussed claims. The Examiner does not offer a separate analysis of his rejection of claim 26. Consequently, Applicant merely relies on the arguments presented above in connection with claims 1, 7, 14 and 20 to underscore the differences between the subject matter of claim 26 and the cumulative teachings of the references relied upon by the Examiner.

D. The Subject Matter defined by Claims 6 and 19 is not Obvious
Within the Meaning of 35 USC 103 in View of the Cumulative Teachings of
Lownes, Nishimura, Applicant's Related Art and Official Notice.

Applicant offers no separate arguments with respect to claims 6 and 19. The arguments presented above in connection with claims 5 and 18 are incorporated as if they are repeated here.

E. The Subject Matter defined by Claims 12 and 25 is not Obvious
Within the Meaning of 35 USC 103 in View of the Cumulative Teachings of
Lownes, Nishimura, Applicant's Related Art, Gerszberg and Official Notice.

Applicant offers no separate arguments with respect to claims 12 and 25. The arguments presented above in connection with claims 11 and 25 are incorporated as if they are repeated here.

F. The Subject Matter defined by Claims 28-33 is not Obvious
Within the Meaning of 35 USC 103 in View of the Cumulative Teachings of
Lownes, Nishimura, Applicant's Related Art, Gerszberg and Ryu.

Claims 28 and 31 are similar. Claim 28 is directed to audio/video processing apparatus and claim 31 is directed to the method performed by that apparatus. Claim 28, as an example, calls for a reception section that receives played back A/V contents transmitted through a network. A storage section temporarily stores one frame of the A/V contents received by the reception section. A control section controls playback apparatus to repetitively play back and display the frame of temporarily stored A/V contents when a message is received through a transmission line that a pause mode is initiated.

In applying Lownes to claim 28, the Examiner asserts that Lownes describes a storage section "for storing the audio/video contents received by said reception section." Lownes fails to describe such a storage section. Buffers in VCR 113 and in IEEE 1394 interface 110 do not store A/V contents received by the reception section. Rather, these buffers store A/V contents transmitted to the reception section.

The Examiner also asserts that Lownes describes a control section that controls the playback apparatus to play back the A/V contents received by the reception section. But Lownes controls VCR 113, which plays back A/V contents transmitted to the reception section. Lownes fails to control playback apparatus to play back A/V contents received by the reception section, much less one frame of the received A/V contents.

The Examiner identifies features recited by claim 28 that are not found in Lownes. However, the Examiner erroneously contends that such features nevertheless are described in those references that he combines with Lownes to reject claim 28:

The Examiner correctly finds that Lownes does not control playback apparatus to repetitively play back and display A/V contents received by and stored at his reception section when a pause mode message is received. However, the Examiner contends that this feature is described by Ryu in combination with Gerszberg and Applicant's related art. Applicant respectfully disagrees with this contention. Ryu describes sound mode switching for picture-in-picture apparatus. The relevance of Ryu to claim 28 is not understood. As discussed above, Gerszberg describes the repeated transmission of a frozen screen to a muted video phone; but the frozen screen is transmitted from and, thus, occupies bandwidth of the transmitting video phone. Gerszberg does not store A/V contents at the muted video phone, to repeatedly read out the stored A/V contents when the transmitting video phone mutes the receiving video phone. Applicant's related art simply does not contemplate the temporary storage of A/V contents received by the reception section 2 or 32. There are no temporarily stored A/V contents received by reception section 2, 32 to be repetitively played back and displayed.

Therefore, notwithstanding the attempt to find in the cited references a teaching of each of the features recited in claim 28, such references fail to provide such a teaching. The subject matter defined by claim 28 cannot be obvious if the prior art fails to describe it. Accordingly, the Final Rejection of claim 28 should be withdrawn.


No separate analysis is provided in the Final Rejection of claims 29-33. Applicant relies on the foregoing arguments set out with respect to claim 28 to traverse the rejections of claims 29-33.

Conclusion

The Final Rejection of September 13, 2007 fails to provide a prima facie case of obviousness. The rejections of claims 1-33 are improper because the references relied upon, even in combination, fail to describe each and every limitation recited by Applicant's claims. In the absence of prior art teachings of the features recited by claims 1-33, these claims are unobvious. The withdrawal of the Final Rejection and issuance of the Notice of Allowance are respectfully solicited.

Respectfully submitted,

FROMMER, LAWRENCE & HAUG LLP
Attorneys for Applicants

By 
William S. Frommer
Registration No. 25,506
(212) 588-0800